

**ABSTRACT**

The present invention provides novel polynucleotides encoding *Drosophila* DmTNF polypeptides, fragments and homologs thereof. The present invention also is directed to novel polynucleotides encoding two *Drosophila* DmTNF variants, DmTNFv1 and DmTNFv2 polypeptides, fragments and homologs thereof. Also provided are vectors, host cells, antibodies, and recombinant and synthetic methods for producing said polypeptides. The invention further relates to screening methods for identifying agonists and antagonists of the polynucleotides and polypeptides of the present invention, in addition to methods of genetically modifying *Drosophila* or cultured cells to express or mis-express DmTNF, DmTNFv1, or DmTNFv2. The invention also relates to the use of such modified insects or cells to characterize DmTNF activity, identify TNF-like genes and/or genes implicated in modulating TNF, characterize TNF signaling pathways, and/or to identify modulators of DmTNF activity.

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